The negatives do not indicate any stars or nebulæ on the orbital course of the comet that might temporarily add to its brightness when in transit over them, but whatever the cause may have been, the reality of the phenomena can scarcely be doubted, for both eye-observations and the photographs confirm each other.

On the Orbit of Σ 1785. By J. E. Gore.

Using the measures of this binary pair given by Mr. Burnham in the *Monthly Notices* for 1892 December, I have computed the orbit, and find the following provisional elements —

Elements of Σ 1785.

P = 125·52 years	☊ = 137° 1′
T = 1904·84	λ = 220° 21′
e = 0·6377	a = 2″·18
i = 34° 46′	μ = +2°·868

The following is a comparison between the measures and the positions computed from the above elements:—

Epoch.	Observer.	θ_o	θ_c	$\theta_o-\theta_c$	ρ_o	ρ_c	$\rho_o-\rho_c$
		°	°	°	″	″	″
1823·40	South	160·4	157·3	+3·1	5·66	3·25	(+2·41)
1830·12	Struve	164·4	162·7	+1·7	3·49	3·33	+0·16
1830·20	Herschel	164·5	162·8	+1·7	4·62	3·33	(+1·29)
1831·34	Herschel	166·3	163·6	+2·7	(7·69)	3·38	(+4·31)
1843·48	Mädler	174·6	173·0	+1·6	3·39	3·30	+0·09
1846·40	Philpott	176·2	175·3	+0·9	3·19	3·26	−0·07
1850·44	Mädler	178·0	178·7	−0·7	...	3·18	...
1851·28	Mädler	178·7	179·4	−0·7	3·48	3·16	+0·32
1855·32	Mädler	183·6	182·9	+0·7	3·11	3·08	+0·03
1856·31	Mädler	183·1	184·0	−0·9	2·97	3·05	−0·08
1856·36	Secchi	186·0	184·0	+2·0	3·24	3·05	+0·19
1858·38	Dembowski	185·1	185·8	−0·7	3·12	3·05	+0·12
1859·32	Morton	185·4	186·7	−1·3	2·89	2·97	−0·08
1861·57	Mädler	190·0	188·9	+1·1	3·51	2·90	+0·61
1863·31	Radcliffe	192·0	190·7	+1·3	2·73	2·83	−0·10
1863·68	Dembowski	191·1	191·1	0·0	2·66	2·82	−0·16
1864·47	Engelmann	193·5	192·0	+1·5	2·88	2·80	+0·08
1865·42	Engelmann	193·8	193·0	+0·8	2·87	2·77	+0·10

Epoch.	Observer.	θ_o	θ_c	$\theta_o-\theta_c$	ρ_o	ρ_c	$\rho_o-\rho_c$
		°	°	°	"	"	"
1865·82	Dembowski	193·3	193·5	−0·2	2·59	2·75	−0·16
1867·40	O. Struve	196·1	195·3	+0·8	2·81	2·70	+0·11
1867·83	Dembowski	195·8	195·8	0·0	2·52	2·68	−0·16
1870·19	Dunér	198·6	198·8	−0·2	2·54	2·57	−0·03
1870·33	O. Struve	199·4	199·0	+0·4	2·79	2·57	+0·22
1870·35	Gledhill	200·5	199·0	+1·5	2·54	2·57	−0·03
1870·81	Dembowski	199·4	199·6	−0·2	2·43	2·55	−0·12
1871·35	Radcliffe	199·1	200·3	−1·2	2·43	2·53	−0·10
1871·38	Knott	199·2	200·3	−1·1	2·51	2·53	−0·02
1871·43	Pierce	199·9	200·4	−0·5	2·38	2·53	−0·15
1872·43	Dunér	201·7	201·7	0·0	2·67	2·49	+0·18
1872·89	Dembowski	201·9	202·3	−0·4	2·32	2·47	−0·15
1873·42	Linstedt	200·2	203·1	−2·9	2·41	2·45	−0·04
1873·57	Wilson & Seabroke	202·2	203·3	−1·1	2·45	2·44	+0·01
1874·79	Dembowski	205·2	205·1	+0·1	2·18	2·37	−0·19
1875·24	Dunér	206·4	205·8	+0·6	2·47	2·35	+0·12
1875·32	Schiaparelli	205 3	205·9	−0·6	2·34	2·34	0·00
1876·00	Wilson & Seabroke	207·6	206 9	+0·7	2·37	2·30	+0·07
1876·41	Plummer	208·6	207·5	+1·1	2·56	2·28	+0·28
1876·45	Schiaparelli	206·9	207·6	−0·7	2·15	2·28	−0·13
1876·85	Dembowski	208·5	208·2	+0·3	2·14	2·26	−0·12
1877·32	Doberck	208·4	209·1	−0·7	2·21	2·24	−0·03
1877·38	Schiaparelli	208·6	209·2	−0·6	2·25	2·24	+0·01
1878·34	Dembowski	210·5	210·9	−0·4	2·14	2·21	−0·07
1878·39	Seabroke	210·7	211·0	−0·3	2·55	2·21	+0·34
1879·42	Hall	214·5	212·8	+1·7	2·04	2·16	−0·12
1879·46	Schiaparelli	212·5	212·9	−0·4	2·20	2·16	+0·04
1879·50	Seabroke	214·0	213·0	+1·0	2·07	2·16	−0·09
1880·35	Hall	215·9	214·5	+1·4	1·92	(2·12)	−0·20
1880·37	Bigourdan	213·8	214·6	−0·8	2·13	2·11	+0·02
1880·46	Jedrzejewicz	215·4	214·7	+0·7	2·27	2·11	+0·16
1880·46	Seabroke	215·2	214·7	+0·5	2·03	2·11	−0·08
1881·33	Bigourdan	216·9	216·5	+0 4	1·98	2·05	−0·07
1881·36	Schiaparelli	217·9	216·6	+1·3	2·11	2·05	+0·06
1881·40	Hough	215·7	216·6	−0·9	1·96	2·05	−0·09
1881·40	Hall	217·8	216·6	+1·2	1·92	2·05	−0·13
1882·42	Hall	219·9	218·8	+1·1	1·93	2·00	−0·07
1882·44	Schiaparelli	220·0	218·9	+1·1	2·13	2·00	+0·13
1882·45	Seabroke	221·3	218·9	+2·4	2·22	2·00	+0·22

Epoch.	Observer.	θ_o	θ_c	$\theta_o-\theta_c$	ρ_o	ρ_c	$\rho_o-\rho_c$
		°	°	°	″	″	″
1882·46	Rugby	221·9	218·9	+3·0	2·22	2·00	+0·22
1882·93	Engelmann	221·2	219·9	+1·3	2·06	1·97	+0·09
1883·42	Hall	221·6	221·0	+0·6	1·90	1·94	−0·04
1883·46	Schiaparelli	221·8	221·1	+0·7	1·91	1·94	−0·03
1884·39	Hall	224·8	223·3	+1·5	1·86	1·89	−0·03
1884·46	Schiaparelli	224·9	223·5	+1·4	1·98	1·89	+0·09
1884·63	Rugby	226·6	223·9	+2·7	1·78	1·88	−0·10
1885·35	Perrotin	223·8	225·7	−1·9	1·86	1·84	+0·02
1885·36	Hall	226·8	225·7	+1·1	1·78	1·84	−0·06
1885·43	Rugby	227·9	225·9	+2·0	1·72	1·84	−0·12
1885·44	Schiaparelli	227·1	225·9	+1·2	1·83	1·84	−0·01
1886·38	Perrotin	228·7	228·4	+0·3	1·68	1·79	−0·11
1886·41	Rugby	231·4	228·5	+2·9	1·46	1·79	−0·33
1886·41	Hall	228·0	228·5	−0·5	1·83	1·79	+0·04
1887·37	Hall	232·7	231·3	+1·4	1·62	1·73	−0·11
1887·45	Schiaparelli	231·8	231·5	+0·3	1·67	1·73	−0·06
1887·45	Rugby	232·8	231·5	+1·3	1·08	1·73	−0·65
1887·59	Tarrant	228·0	231·9	−3·9	1·80	1·72	+0·08
1888·33	Rugby	236·5	234·1	+2·4	1·12	1·67	−0·55
1888·37	Hall	233·9	234·2	−0·3	1·61	1·67	−0·06
1889·28	Rugby	235·3	237·1	−1·8	1·60	1·61	−0·01
1889·45	Hall	237·1	237·7	−0·6	1·51	1·61	−0·10
1890·43	Hall	240·7	241·1	−0·4	1·54	1·54	0·00
1890·47	Hayn	240·5	241·2	−0·7	1·57	1·54	+0·03
1892·37	Burnham	248·6	248·6	0·0	1·46	1·43	+0·03

As the great majority of the residuals in position-angle are less than 2°, and many under 1°, the agreement may be considered satisfactory.

Assuming that the mass of the system is equal to the mass of the Sun, the "hypothetical parallax" will be—

$$p = aP^{-\frac{2}{3}} = 0''\cdot087.$$

On the Orbit of the Binary Star β 416. By J. E. Gore.

This star, which is identical with BAC 5825, was discovered as a wide double star by Sir John Herschel on 1837 June 8, during his residence at the Cape of Good Hope. In 1876 Mr. Burnham found the brighter component to be also double, but only estimated the position-angle and distance. Since its